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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/407,184	09/27/1999	FARSHAD KHORRAMI	457020-2250.	2412

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NEW YORK, NY 10151

EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT	PAPER NUMBER
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2681

DATE MAILED: 04/09/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

www

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Office Action Summary

Application No.
09/407,184

Applicant(s)
Khorrami et al.

Examiner
Joy Contee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 27, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-26, 28-37, 40-43, and 48-50 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-37, 40-43, 49, and 50 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11, 14, 15, 17, 18, 20-24, and 48 is/are rejected.
- 7) ☒ Claim(s) 7, 13, 16, 19, 25, and 26 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to Examiner's reasons for indicating allowable subject matter for claims 1-6,14,15,17,18,20-24 and 48 have been considered but are moot in view of the new grounds of rejection.

2. In reconsidering the pending claims, the indicated allowability of claims 1-

8-11
6,14,15,17,18,20-24 and 48 is withdrawn in view of Spillman, Jr. (5,440,300), previously used, and a combination of Spillman, Jr. in view of Ritter (5,859,873), previously used, rejections based on the reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6,8-11,20-24 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Spillman, Jr., U.S. Patent No. 5,440,300.

Regarding claim 1, Spillman, Jr. discloses a wireless communication system comprising:

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a number of sensors each having one or more antenna associated therewith and being adaptable to be located on or within an element, each sensor being adaptable to detect at least one respective predetermined characteristic of said element (col. 2, line 15 to col. 3, line 11); and

control transceiver means (i.e., RF coupling 68 in Fig. 9C), operable to communicate in a wireless manner with said number of sensors, for supplying a RF signal to at least one antenna (col. 4, lines 27-37 and col. 5, lines 7-16);

whereby, in response to said RF signal, the respective sensor or sensors and the at least one antenna associated therewith generate by use of electromagnetic coupling therebetween a characteristic signal indicative of a detected respective characteristic or characteristics and modulate the same so as to obtain an output signal and transmit said output signal (col. 2, line 40 to col. 3, line 11).

Regarding claim 8, Spillman, Jr. discloses a wireless communication system comprising:

a number of actuators each having one or more antenna associated therewith and being adaptable to be located on or within an element and being adaptable for causing said element to deform in a desired manner when actuated (col. 2, lines 53-64); and

control transceiver means, operable to communicate in a wireless manner with said number of actuators, for supplying a power signal to a desired number of said actuators so as to activate each respective antenna thereof and enable the desired actuator or actuators to cause said element to achieve the desired deformation (col.2, lines 59-69 to col. 3, lines 1-11).

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Regarding claims 21 and 48, Spillman, Jr. discloses an element for use in a system for monitoring and/or deforming a structure in a desired manner, said element having at least one antenna associated therewith and being adaptable to be located on or within said structure and being adaptable to operate as at least one of a sensor device and an actuator device (col. 2, lines 15-58), in which said element is operable to monitor at least one predetermined characteristic of said structure when operating as a sensor device and in which said element is operable to cause said structure to deform in said desired manner when operating as an actuator (col. 3, lines 12-58), and in which said element is operable to receive a signal transmitted thereto in a wireless manner to activate the antenna thereof and enable said element to monitor the at least one predetermined characteristics of said structure when operating as a sensor device and enable said element to cause said structure to deform in said desired manner when operating as an actuator whereby, when operating as a sensor device, the respective sensor and the at least one antenna associated therewith generate by use of electromagnetic coupling therebetween and modulate the same so as to obtain an output signal and transmit said output signal (col. 2, line 59 to col. 3, line 11 and col. 5, lines 1-16).

Regarding claims 2, 9 and 22, which are dependent on claims 1, 8 and 21, respectively, Spillman, Jr. discloses a target wherein the target and sensors/actuators include only passive electronic devices (col.4, lines 16-26).

Regarding claims 3, 10 and 23, Spillman, Jr. discloses a wireless communications system as in claims 1,8 and 21, respectively, wherein at least one of said number of sensors/actuators

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includes a substrate portion having non-linear material characteristics (col. 2, lines 33-39 and col. 5, lines 5-25).

Regarding claims 4, 11 and 24, which are dependent on claims 3, 10 and 23, respectively, Spillman, Jr. further discloses a smart structure (Fig. 1) wherein said substrate is a piezoelectric devices (col. 2, lines 52-58).

Regarding claim 5, Spillman, Jr. discloses a wireless communication system as in claim 3, wherein the characteristic signal is modulated with a power signal so as to obtain the output signal (col. 2, lines 59-69 to col. 3, lines 1-11).

Regarding claim 6, Spillman, Jr., discloses a wireless communication system as in claim 1, wherein the at least one predetermined characteristic includes at least one of strain, acceleration, deformation and pressure (col. 2, lines 33-39).

Regarding claim 20, Spillman, Jr. discloses a wireless communication system as in claim 10, wherein the desired actuator or actuators demodulates the received power signal so as to form an actuation signal (col. 2, line 52 to col. 3, line 11).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14,15,17,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spillman, Jr, in view of Ritter, U.S. Patent No. 5,859,873.

Regarding claims 14,15, 17 and 18, Spillman, Jr. discloses a wireless communication system as in claims 1, 14, 8 and 17, Spillman, Jr. fails to explicitly disclose means for storing the supplied power signal (and using a rechargeable battery and capacitor bank) (col. 2, lines 11-22 and col. 3, lines 2-12).

Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to modified Spillman, Jr. to include a capacitor bank acting as a thin film battery for stored energy such that the smart structure taught in Spillman, Jr. is indeed a modular construction maybe made of thin film electronics (see Spillman, Jr. col. 5, lines 1-16).

Allowable Subject Matter

7. Claims 28-37, 40-43 and 49-50 are allowed.
8. Claims 7,13,16,19,25,26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose in combination with the limitations describing a number of sensors and actuators for monitoring/deforming a structure wherein each antenna is a microstrip

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antenna and further includes a grating layer of the target element. Nor does prior art disclose in combination with the limitations describing a number of sensors and actuators for monitoring/deforming a structure wherein the control means communicates with each said device over a microwave frequency range.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K. Contee whose telephone number is (703) 308-0149, M-F, 5:30 to 2:00 p.m.

If attempts to reach the examiner are not successful, the examiner's supervisor, Dwayne Bost can be reached on (703)305-4778.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry or for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to

Crystal Park II

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Sixth Floor (Receptionist)


2121 Crystal Drive

Arlington, VA



Joy K. Contee

April 5, 2003



DWAYNE BOST
SUPERVISORY PATENT EXAMINER
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